ICT

preparation notebook

first term 2021

GRADE 4

ICT
General and specific objectives for fourth grade

General objectives of the ICT course:

• Employing information and communication technology in scientific and life fields.

• Facing the challenges imposed on it by the information and communication revolution, as well as globalization.

• Providing students with more knowledge and importance of information and communication technology.

• Providing the skills of scientific, critical and creative thinking.

• Use of technology used by people of determination in their lives

• Proficiency in data handling and analysis skills.

• Acquiring communication skills with others and making reports and researches.

• Employing information and communication technology to produce useful projects.

• Acquiring teamwork skills and distributing roles to complete tasks.

• Enhancing the concepts of self-learning and continuous learning and working with them.

• Employing information and communication technology to solve life problems.

• Acquiring the correct ethics and behaviors in dealing with the digital security plan.

Specific objectives of the ICT course

At the end of this chapter the student is expected to be able to:

• Knows the use of information technology in scientific fields.

• Discusses the history of technology and its development in our daily lives.

• Develops writing skills on the computer.

• Explains the basic components of the computer.

• differentiates between input and output and processing units.

• Describes the different types of computers.

• differentiate between hardware and software.

• Explains the concept of assistive technology.

• Discusses the role of technology in improving the lives of people of determination.

• He discusses the problems he faces at the level of information technology and possible solutions to them.

• Identifies the means used in analyzing, organizing and displaying data.

• Discusses the different electronic communication methods and how to use them.

• Explains how technological solutions are compatible with the lives of others.

• Describes the risks of the Internet and how to maintain the privacy and security of information while using the Internet.

• Explains the ethics of using ICT tools.

• Identifies the characteristics of reliable information sources on the Internet.

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Lesson 1
(Active Explorer)

Objectives

At the end of the lesson, he will be able to:

• Learn some technology tools used in the exploration of the Earth.

• Suggests scientific terms related to technology.

• Describes how technology can be used to search for underground objects.

Accompanying activities

Take the students to the computer room and divide them into small groups and discuss with them the role of technology in the lives of archaeologists and the way they work. Citing a presentation (video) to the scientist Albert Lynn and his way of working and then ask them the introductory question.

Lesson content

The importance of technological tools for archaeologists:

• It allows scientists to explore in simple and easy ways that save effort and cost

• Narrowing the scope of the search in excavations for antiquities.

The most important tools that scientists use:

• Pictures through the satellite and the drone.

• The Global Positioning System (GPS).

• magnetometer and ground penetrating radar.

Introductory question

What are the different types of technology they use to explore the Earth?

Evaluation

What do archaeologists do when they do not know where to dig?

"Strategy"
Critical thinking
Problem Solving

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Lesson 2
Technology and its historical development

Objectives

At the end of the lesson, he will be able to:

• Discusses the history of information and communication technology.

• Discusses how technology is used in our daily lives.

• Develops his skill in writing on the computer.

Accompanying activities

Take the students to the computer room and divided them into small groups and discussed technology and its development in ancient history over different ages, citing my presentation (video) that illustrates ways of communication, ancient and modern, from the Pharaohs time to the modern era.

Lesson content

Stages of technology development over time:

• The era before the mechanical revolution. (photos and drawings)

• The era of the mechanical revolution. (typewriter and Pascaline)

• The era of the electro-mechanical revolution. (telephone and recording device)

• The era of the electronic revolution. (Smart phone - satellite - email)

Introductory question

What methods do you use to log information?

Evaluation

Solving the student book questions on pg. 15, 16, 17

"Strategy" critical thinking problem solving

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Lesson 3
Components of a Computer

Objectives

At the end of the lesson , he will be able to :

• Explains the basic components that make up the computer.

• defines the concept of inputs, outputs and data.

• Describes the different types of computers.

Accompanying activities

Take the students to the computer room and divide them into small groups and discuss with them the components needed to use the computer in a particular task such as making a photo album and entering its data.

Lesson content

computer components

1 - Input devices

• Keyboard - Mouse

• Microphone - Camera

• Scanner

2 - output devices

• Display Screen - Terminal Braille System

• Megaphone - Speech Synthesizer

• printer

introductory question

How can you use technology in your daily life?

Evaluation

In your opinion, what are the components of a computer that may benefit people of determination?

"Strategy"
critical thinking
problem solving

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lesson 4

Software and operating systems.

Objectives

At the end of the lesson , he will be able to :

- Explains the main operations of operating systems.

- Explains the difference between hardware and software.

Accompanying activities

Take the students to the computer room and divide them into small groups and show them a video of how the operating system works and how it controls hardware and software. Then we discuss the schematic diagram in the book of how the data is processed and ask them to make drawings similar to the stages of another program.

Lesson content

Software:

The set of commands and instructions that instruct a computer how to do its job. Software is responsible for operating a computer, controlling it, and extending the capabilities of its processing operations.

Software types:

- System software: These are programs that are designed to operate and control a computer

- Application software: It represents a group of software designed to help the user complete tasks on the computer; Create documents, develop databases, conduct online research, and design graphics
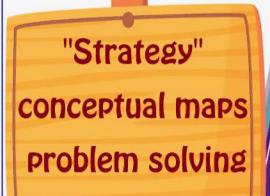
Hardware:

Hardware is defined as the tangible units through which data can be entered and extracted.

Introductory question

How does your computer communicate with you and carry out your commands?

Evaluation

Solving the student book questions on p. 24 and 25.

"Strategy" conceptual maps problem solving

Lesson 5

Supporting People of Determination.

Objectives

- Explains the definition of assistive technology.
- Discusses how technology improves the lives of people of determination.
- Suggests a technological means that can contribute to improving the lives of others.

Accompanying activities

Take the students to the computer room and divide them into small groups and show them a video of the scientist Albert Lynn who works even though his leg is amputated, which did not make him stand in the way of his success. Ask them to do a collective brainstorming to reach ideas to help people of determination through technology they have previously seen or wished for in the future Describe it to their colleagues.

Lesson content

Assistive technology for people of determination: which is defined as "any material, piece, or system product, or something modified or made according to demand with the aim of "increasing the scientific or functional efficiency of people of determination."

Examples of assistive technology:

- Screen magnification software (for people with low vision)
- Hearing aids (for people with hearing problems)
- Alternative communication software (facilitating oral and linguistic communication)
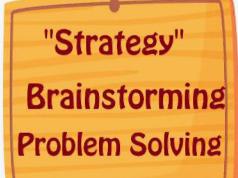- Sports equipment (prosthetic devices and Paralympic athletes' devices)

Introductory question

How technology can help people of determination?

Evaluation

Solving thestudent book questions on p. 28 and 29

"Strategy"
Brainstorming
Problem Solving

lesson 6
ICT common problems and solutions

Objectives

• He discusses the problems he encountered at the level of information and communication technology.

• Discusses the issues he faces while using those rivers in using these patterns.

• Proposes solutions to address the business problems of the information and communication company.

Accompanying activities

Take the students to the computer room and divide them into small groups and ask them the introductory question and then we start a brainstorming process among the students to exchange experiences and discuss about the problems they face at the level of information technology and the solutions to each problem.

Lesson content

Some potential problems and solutions:

• Not being able to open an application: (reboot - update the application - reinstall)

Mouse pointer does not work: (make sure the cable is connected - reboot - replace the mouse)

• You are unable to find a file: (search in documents or through the search box in the start menu)

• The screen stops displaying data: (pressing the alt + ctrl + del buttons and end the task - restart)

• Keyboard has stopped: (make sure the cable is connected - restart - replace the keyboard)

Introductory question

What ICT related problems have you faced in your life?

Evaluation

solving book questions p. 32 and 33

"Strategy"
Critical Thinking
Problem Solving

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Date		
Period		
class		

Lesson 7

Data collection, analysis and expression in graphs

Objectives

• Identifies digital means that can be used to organize information.

• Provides information about a student issue by collecting, analyzing and graphing data

• He discusses with his colleagues common issues related to students.

Accompanying activities

Take the students to the computer room and divide them into small groups and ask them the introductory question and then start the discussion among the students in order to conclude some methods that we can adopt to collect data, analyze it and express it in graphs.
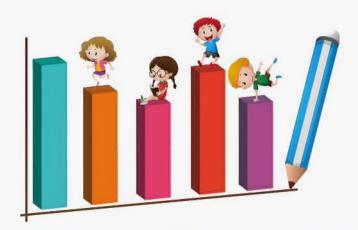
Lesson content

The most common sources of data collection:

Books and Articles - Polls

Records and Reports - Experiences

graph:

A column graph is the most common for representing data, as it clearly shows and compares different categories of information. By drawing or using Excel

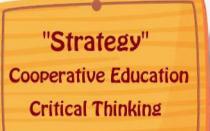## Introductory question

How can digital media help you organize information?

Evaluation

Solving the book's questions on p. 36 and 37

"Strategy"
Cooperative Education
Critical Thinking

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Lesson 8

preparing reports for the results of the research:

Objectives

• Discusses different ways of communicating through electronic means.

• Explains how to use various technological means to communicate with others.

• Communicates by electronic means with his colleagues and teachers.

Accompanying activities

Take the students to the computer room and divide them into small groups and ask them the introductory question and then we start the discussion among the students explaining what the scientists have reached of information in different and multiple ways and showing the most common way to share data is by e-mail by reading the graph in the book.

Lesson content

The most common ways to share data:

• E-mail

• Video chats

• Text messages

Introductory question

What is the importance of communicating electronically with others?

Evaluation

solving student book questions p.40 and 41

"Strategy"
critical thinking
collaborative learning

Lesson 9
Active Explorer

Objectives

At the end of the lesson the student will be able to:

• He talks about the importance of the internet.

• Describes how technology is used to communicate with others.

• Explains why technological solutions are compatible with the lives of others.

Accompanying activities

Take the students to the computer room, divide them into small groups and ask the introductory question. Then we watch a video about elegant olah and how I explored lemon trees and their research results.

Lesson content

• The importance of the Internet in our lives.

• The correct way to search in encyclopedias and search engines.

• How to verify the sources of information.

• Create online awareness campaigns.

Introductory question

How can the Internet help you finding more information about the things and people you care about?

Evaluation

Solve the book's questions pages 48 and 49

"Strategy"
critical thinking
problem solving

Date	
Period	
class	

Lesson 10
the dangers associated with the Internet

Objectives

At the end of the lesson the student will be able to:

• Describes the risks and damages associated with the Internet.

• Explains the importance of keeping personal information private and not disclosing it.

• Discusses ways to maintain security measures while using the Internet.

Accompanying activities

Take the students to the computer room, divide them into small groups, ask the introductory question, and ask each group to make a list of safety tips related to the use of the Internet.

Lessson content

Unsafe websites.

• Do not click on unknown links.

• Close annoying sites and tell family members.

Share data and information on the Internet.

• Not to share personal data to avoid annoying messages.

• Think carefully before posting the contents of photos and videos.

Download the files.

• Ensure that the downloaded files are free of viruses.

• Verify the reliable sources for downloading files.

Introductory question

What are the security measures that you follow while using the Internet?

Evaluation

solve the book's questions

pages 52 and 53

"Strategy"

critical thinking

cooperative

learning.

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Date		
Period		
class		

Lesson 11
Using ICT tools in a correct and ethical manner.

Objectives

At the end of the lesson the student will be able to:

• Discusses the publication of messages to communicate positively on the Internet.

• Explains the ethics of using ICT tools.

• Explains the positive and negative effects of using ICT tools.

Accompanying activities

Take the students to the computer room and divide them into small groups and ask the introductory question and ask each group to discuss positive messages that can be disseminated and shared with their colleagues and the ethics of dealing with the Internet.

Lesson content

Ethics of using ICT tools:

• Respect privacy while publishing information.

• Mention the sources and source of the information.

• Respect for the law.

Positive effects of using IT tools:

• The ability to communicate with family and friends easily.

• It is a treasure trove of different and useful information.

• A huge library of useful videos and photos.

Disadvantages of using technology tools:

• Impact on health due to eyestrain.

• The use of the Internet can pose a risk to the time of its users

• Much of this information is not censored or audited to review its content

Introductory question

What positive messages have you seen on the Internet?

Evaluation

Solve the book's questions pages 56 and 57

"Strategy"
Brainstorming
Critical Thinking

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Date		
Period		
class		

Lesson 12
How to search on the Internet.

Objectives

At the end of the lesson the student will be able to:

• Explains how to use Internet browsers.

• discusses the method of selecting keywords to be used in Internet searches.

Accompanying activities

Take the students to the computer room, divide them into small groups, and ask the introductory question whether they always find the information they searched for on the Internet. Explaining safe and smart online search methods.

Lesson content

Searching safely:

• Take into account the browser's security alerts.

• Using search engines for children.

• Be sure to browse websites suitable for your age group.

Smart search:

• Write long sentences to get better results while specifying what you are looking for.

• The ability to search by images through the camera button in the search engine.

• To ensure that your research covers two specific topics, we put a sign among them during the search.

• To ensure that your search does not include a specific result, we put a tick before the words that you do not want to be included in the search

Introductory question

What are the problems you face while doing an internet search?

Evaluation

Solve the book's questions pages 60 and 61

"Strategy"
Critical Thinking
Brainstorming

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Date		
Period		
class		

Lesson 13

How to verify the authenticity of information on the Internet

Objectives

At the end of the lesson the student will be able to:

• Determines the characteristics of reliable sources on the Internet.

• Describes reliable and unreliable sources of information on the Internet.

• Explains the purpose of establishing the Egyptian Knowledge Bank website.

Accompanying activities

Take the students to the computer room and divide them into small groups and ask the introductory question and discuss their findings using a presentation on how to identify reliable and unreliable sources on the Internet.

Lesson content

Unreliable internet sources:

Blogs, open source websites, wikis, and social media applications are considered unreliable sources because they may contain personal opinions and misconceptions.

Verify reliable sources:

• Verify the date of publication and the identity of the authors, whether they are experienced personalities or not.

• The text is free of errors, well written and professionally designed.

• Sites that end with (gov, org, edu) have a high degree of credibility because they are managed by government agencies

Egyptian Knowledge Bank :

It was created to facilitate access to information that has already been verified by a large library inside it.

Introductory question

How do you determine whether the information you find on the Internet is correct or not?

Evaluation

Solve the book's questions pages 64 and 65

"Strategy"
critical thinking
collaborative learning

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Date		
Period		
class		

Lesson 14

Who can help you solve your problems while using the Internet.

Objectives

At the end of the lesson the student will be able to:

• Explains some common problems when using the Internet.

• Determines the person who can help him with the problems of using the Internet.

• Describes the role of the Internet Crime Control Department.

Accompanying activities

Take the students to the computer room and divide them into small groups. Ask the introductory question and ask each group to make a list of possible problems and ways to solve them, then compare them with the other groups.

Lesson content

Common problems when using the Internet:

• Bullying: a person's behavior in a bad way towards another person, such as obscene posts, bad messages or offensive texts.

• Identity theft: When someone collects information about you and uses it to impersonate or defraud you, this is called identity theft and the thief can use your personal information and access your address and phone.

The necessary steps to face problems via the Internet.

• Informing an adult person whom you trust in this matter, such as the father and the mother.

• The matter may require the intervention of the competent authorities (the police, the Internet Crimes Control Department).

Introductory question

How do you act if someone offends you on the Internet?

Evaluation

Solve the book's questions pages 68 and 69

"Strategy"
critical thinking
cooperative education

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Lesson 15
A personal digital security plan.

Objectives

At the end of the lesson the student will be able to:

• Describes creating a strong password.

• Explains the importance of powerful antivirus software.

• Explains ways to protect devices from Internet opportunities.

Accompanying activities

Take the students to the computer room, divide them into small groups, ask the introductory question, discuss how to protect their devices, compare group plans, and share information among the students.

Lesson content

Create a strong password

It is important to have a strong password to protect your device and personal accounts from hacking . To obtain a strong password, observe the following precautions:

• Do not use one password for all your accounts.

• Keep passwords in a safe place.

• The password does not include your name or other personal information.

• It must consist of at least 8 letters and numbers together and not be easy to predict.

Choose an antivirus program.

Personal security when using the Internet.

Introductory question

Why is it important to use a strong password?

Evaluation

Solve the book's questions pages 72 and 73

"strategy"

critical thinking

Cooperative Education

Date		
Period		
class		

Lesson 16
Apply what you have learned.

Objectives

At the end of the lesson the student will be able to:

• Discusses topics that he would like to conduct research on with his colleagues.

• Choose one of the important topics to educate others.

• Choose an appropriate tool to display the information.

Accompanying activities

Take the students to the computer room and divide them into small groups and ask the introductory question and discuss with them how to prepare a report on the subject of the research, touching on the different ways of making reports and how to present it.

Lesson content

The most important ways to display reports:

• Presentation program (power point).

• video clips.

• Advertising posters.

Introductory question

What topic do you want to research and why?

Evaluation

solving book questions from 76 and 77

"Strategy "
critical thinking
project

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